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Momentum, Heat, and Mass Transfer

SECOND EDITION

This book was set in Times New Roman.
The editors were B. J. Clark and Matthew Cahill;
the production supervisor was Thomas J. LoPinto.
New drawings were done by John Cordes, J & R Technical Services, Inc.
The Maple Press Company was printer and binder.

Library of Congress Cataloging in Publication Data

Bennett, Caroll O
Momentum, heat, and mass transfer.

(Chemical engineering series)
Includes bibliography.
1. Transport theory. 2. Chemical engineering.
I. Myers, John Earle, date joint author.
II. Title.
TP156.T7B46 1974 660.2'842 73-13857
ISBN 0-07-004667-0

**MOMENTUM,
HEAT, AND
MASS TRANSFER**

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WPI Acc No: 1992-217838/199227 XRPX Acc No: N92-165425

Removal of artificial joints - with focussed ultrasonic head to loosen cement around joint support

Patent Assignee: SIEMENS AG (SIEI)
Inventor: HASSLER D
Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 4041063	A	19920625	DE 4041063	A	19901220	199227	B

Priority Applications (No Type Date): DE 4041063 A 19901220
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 4041063	A		17	A61F-002/46	

Abstract (Basic): DE 4041063 A

The ultrasonic head (10,9) has a shaped end to fit over the joint (3) and to direct ultrasonic vibrations through the joint and into the current which fixes the joint into the bone. The ultrasonic vibration is selected to destroy the cement with no damage to the surrounding bone. The joint can then be removed and replaced.

The piezoelectric transducer (10) provides the vibrations which are focussed by a shaped connecting element. The focus of the vibrations is the centre of the joint and the vibrations in the cement are shear waves. Magnetostrictive vibration generators can also be used.

USE/ADVANTAGE - Safe removal of joints, no excessive force required, minimum damage risk to bones.

Dwg.1/9

Title Terms: REMOVE; ARTIFICIAL; JOINT; FOCUS; ULTRASONIC; HEAD; LOOSE; CEMENT; JOINT; SUPPORT
Derwent Class: P32; P43; P86; S05; V06
International Patent Class (Main): A61F-002/46
International Patent Class (Additional): B06B-001/04; B06B-001/06; B06B-001/08; B06B-003/04; G10K-011/02
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): S05-B02; S05-F03; V06-D